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REMARKS

I. Status of the Application

Claims 1, 3, 4, 5-8, 10-21 are presently pending in the Application. Claims 1, 4, 6-8, 11, 13, 14, 16, 18 and 20 stand rejected under 35 U.S.C. §102(b) over US 5,100,651 ("Boyer"). Claims 14 and 18 stand rejected under 35 U.S.C. § 112, ¶2. Applicant has cancelled claims 7 and 13, as discussed further below.

Without any affirmative indication to the contrary, claims 3, 5, 10, 12, 15, 17, 19, and 21 are apparently allowed even though the Examiner did not positively indicate so in the Office Action Summary, as these claims do not presently stand rejected under the rejections discussed above.

Applicant further believes that the priority claim of the present Application was previously perfected upon entering the amendment to the specification made in the response entitled, "Amendment and Response to Final Office Action" dated 12/2/02 even though the Examiner did not positively indicate so in the present Office Action Summary. Specifically, the present application claims priority to U.S. application Serial No. 08/698,475, filed August 15, 1996 now U.S. Pat. No. 6,074,662, which claims priority from U.S. provisional application Serial No. 60/002,345, filed August 15, 1995.

II. Claims 1, 4, 6-8, 11, 13, 14, 16, 18 and 20 Are Patentable Over Boyer

Claims 1, 4, 6-8, 11, 13, 14, 16, 18 and 20 stand rejected under 35 U.S.C. §102(b) over Boyer. The Examiner is reinstating the rejection presented in the Office Action dated March 29, 2001 (Paper No. 11). Applicant respectfully traverses this rejection.

The Examiner asserts, in part, that Boyer discloses bromochlorophene as a cationic antimicrobial and that the Boyer chew is inherently negatively charged, as defined directly or indirectly by all currently rejected claims. Applicant respectfully disagrees with the Examiner because of at least the following two reasons.

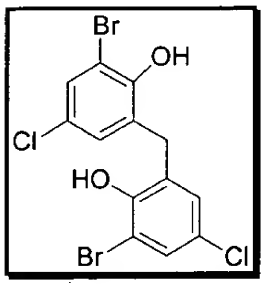
First, Boyer fails to disclose or otherwise teach or suggest a ***cationic*** antimicrobial because Boyer only discloses a health product consisting of the antimicrobial, bromochlorophene. In fact, bromochlorophene is the only antimicrobial taught or suggested by Boyer. For instance, at column 1, lines 39-44, Boyer discloses:

> . . . the active elements are preferably constituted: as anti-decay agents, by fluorine-containing salts such as sodium fluoride, monofluorophosphate of sodium or other fluorine-containing salts alone or in a mixture[,] as an antimicrobial agent, by bromchlorophene [*sic: bromochlorophene*], and as an anti-tartar agent, by sodium benzoate.

In addition, Boyer only discloses at column 1, lines 48-49: ". . . antimicrobial agents such as bromchlorophene [*sic: bromochlorophene*], . . ." Even claims 1 and 2 of Boyer are admittedly limiting by claiming, "anti-microbial agents suitable for combating bacterial flora developed in dental plaque *consisting of* bromochlorophene . . ." (Emphasis added). Nowhere does Boyer teach or suggest an antimicrobial other than bromochlorophene.

A person of ordinary skill in the art recognizes that bromochlorophene is not cationic, i.e., it is not a positively charged compound. Bromochlorophene is known by those of skill in the art as being a charge neutral compound, as evidenced by its chemical structure shown in Figure 1 and Attachment A.

Figure 1: Bromochlorophene



In contrast, Applicant's claims define antimicrobials that are cationic, i.e., they are positively charged compounds, as evidenced by the chemical structures shown in Figures 2-5 and Attachments B-E.

Figure 2: Cetylpyridinium Chloride

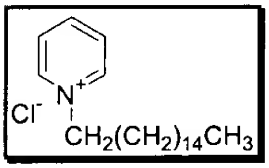


Figure 3: Benzalkonium Chloride

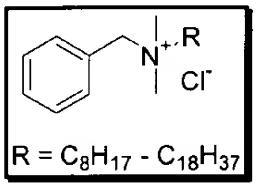


Figure 4: Domiphen Bromide

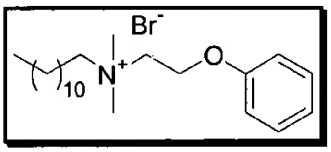
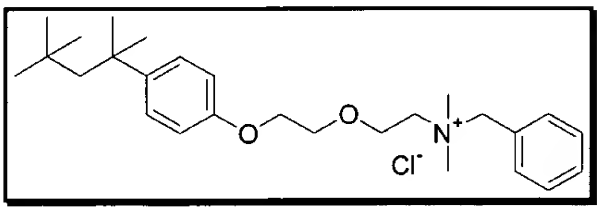


Figure 5: Benzethonium Chloride



It is thus evident from the structures above that Boyer fails to disclose or otherwise teach or suggest ***cationic*** antimicrobials.

Second, it is erroneous to infer that the Boyer chew is inherently negatively charged, as the Examiner asserts, since Boyer does not disclose a charged (positive or otherwise) antimicrobial or any other active agent. That is, because Boyer fails to disclose cationic

antimicrobials (or any other active agent), the Boyer chew need not necessarily be negatively charged. In fact, Boyer's use of a charge *neutral* antimicrobial (i.e., bromochlorophene) and the description of how the bromochlorophene (referred to as an active element at column 1, lines 39-44) is impregnated in the support in view of how Applicant's antimicrobials are maintained on the carrier, leads one to believe that the Boyer support is not necessarily charged:

> The support is first of all immersed in an aqueous solution having a concentration of active elements in a given proportion during a period of approximately 48 hours so as to cause the support to be impregnated by or to absorb these elements . . . (Column 1, lines 62-64).

In contrast, Applicant teaches at page 4, lines 15-20 how the cationic antimicrobials are maintained on the surface of the carrier on the basis of charge attraction:

> An embodiment of the invention describes a formulation that utilizes a proteinaceous animal chew such as rawhide, and **a dentally therapeutic cation, (in this example, chlorhexidine) that is maintained on the surface of the chew on the basis of charge attraction**. The cationic antimicrobials become strongly bound to negatively-charged surfaces containing negatively charged moieties such as carboxylic, phosphate and sulfate moieties by forming salt bridges. (Emphasis added.)

Nowhere does Boyer disclose its antimicrobial, bromochlorophene, being maintained on the support by charge attraction. This is likely due to the fact that bromochlorophene is charge *neutral*. Accordingly, the support of Boyer need not be necessarily charged (positive or otherwise) for the antimicrobial to be maintained within it.

Boyer's support need not be negatively charged given the different mechanism of release of the antimicrobial of Boyer from that of Applicant. It also becomes apparent from their respective mechanisms that Applicant's carrier is therapeutically advantaged over Boyer's support. Boyer's mechanism of release of the antimicrobial from the support is described at column 1, lines 53-59:

> As a modification, the support is formed by the tendon of the neck of the ox or by any other relatively supple but strong material, optionally digestible, that the **animal may chew or gnaw at will and cause the release of the incorporated active elements by a repeated mechanical effect in a salivary medium** comparable to an effective brushing. (Emphasis added.)

In Boyer, then, mechanical chewing induces release of the antimicrobial from the support.

In contrast, the present application discloses at page 4, lines 10-14 that due to its cationic nature, the antimicrobial is readily solubilized in saliva, rather than requiring mechanical chewing as taught by Boyer:

> The therapeutic substance is located on or near the surface of the chewable object in order **for intimate contact between the moisture of saliva and the therapeutic substance** to **occur almost immediately** upon the start of the chewing cycle so as to minimize the possibility that the therapeutic substance will be consumed with the chew, rather than being released in to the oral cavity. (Emphasis added.)

Applicant further explains at page 4, line 25 – page 5, line 3 how the cationic nature of the antimicrobial renders the antimicrobial readily soluble in saliva:

> In a preferred embodiment, **the cation is rapidly solubilized in the saliva** of the oral cavity when the cation is combined with or deposited on the chew in the presence of an alkali metal salt such a as sodium gluconate. It has unexpectedly been found that the presence of the alkali metal salt effectively prevents the cationic compound from precipitating or otherwise adhering to the proteinaceous carrier, thus rendering it **readily soluble in saliva** during the chewing cycle. (Emphasis added.)

Thus, Applicant's mechanism of release of the antimicrobial from the chewable object into the saliva is advantaged over Boyer inasmuch as Applicant's cationic antimicrobial is readily soluble in saliva. The antimicrobial of Boyer, on the other hand, is not released from the support until *repeated mechanical chewing* of the animal. The significance of this difference is apparent from the present application at page 4, lines 2-4:

> **Cationic antimicrobials** that are released from the carrier in the presence of saliva are observed to **have a long duration of action**, due to their retention and adherence to the negatively charged surface in the oral cavity, e.g., enamel hydroxyapatite, acquired pellicle protein, and the oral mucosa.

and at page 5, lines 6-8:

> Thus, the therapeutic cation is released into the salivary solution during the chewing cycle, rather than carried into the intestinal tract as a result of being bound irreversibly to the carrier.

Accordingly, the present animal chew is advantaged over Boyer's health product since the former (having a cationic antimicrobial) will readily solubilize in the oral cavity, whereas the latter (having a charge neutral antimicrobial) will potentially not fully release into the oral cavity, and accordingly will be carried into the intestinal tract. Thus, the present animal chew is expected to provide a greater degree of the desired therapeutic effect over Boyer's health product.

Accordingly, for the reasons discussed above, Applicant respectfully requests removal of the rejection over Boyer and allowance of all currently rejected pending claims at this time.

III. Claims 14 and 18 Are Allowable

Claims 14 and 18 are rejected under 35 U.S.C. § 112, ¶2. Specifically, the Examiner asserts that claims 9 and 13 are duplicative of claims 14 and 18, respectively. Applicant believes that the Examiner intended to assert that claims 7 and 13 are duplicative of claims 14 and 18, respectively, in view of the fact that claim 9 was previously cancelled without prejudice in Applicant's amendment dated December 15, 2000. Accordingly, Applicant's discussion below relating to claims 7 and 13 is intended to be fully responsive to the present rejection.

Applicant has cancelled claims 7 and 13 above. Claims 7 and 13 are cancelled without prejudice to Applicant's right to later present such claim in this or any other patent application,

including, without limitation, any future continuation, division, continuation-in-part, reissue, reexamination or other application. Accordingly, the rejection of claims 14 and 18 is overcome and allowance of these claims is respectfully requested at this time.

IV. Conclusion

Having addressed all outstanding issues, Applicant respectfully requests reconsideration and allowance of claims 1, 4, 6-8, 11, 13, 14, 16, 18 and 20 at this time.

Respectfully submitted,

Dated: May 9, 2003

John P. Iwanicki, Reg. No. 34,628
BANNER & WITCOFF, LTD.
28 State Street, 28th Floor
Boston, MA 02109
617-720-9600

Class: Biological Products

Not Reported

Other Names:
Rapa (EU)
Rapa Seed Extract
Brassica Rapa Seed
Turnip (Brassica Rapa) Seed
Seed Extract

Mixture:
Qing Extract (Campo)

TIA

See 'Regulatory and Ingredient Use regarding use of EU Trivial names Introduction, Part A.

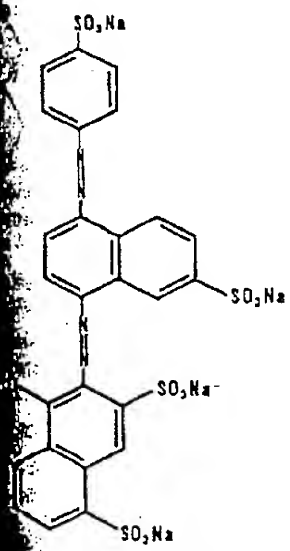
Other Name:
DII (U.S.)

BLACK 1

EINECS No.
219-746-5

Formula:
$C_{36}H_{25}N_5O_{14}S_4 \cdot 4Na$

Brilliant Black 1 is classed a disazo color. It conforms to the



and Ingredient Use Information in Volume 1, Introduction,

Sources: CI 28440

Color Additives -

Function: Colorant

Technical/Other Names:
4-(Acetylamino)-5-Hydroxy-6-[[7-Sulfo-4-[(4-Sulfophenyl)Azo]-1-Naphthalenyl]Azo]-1,7-Naphthalenedisulfonic Acid, Tetrasodium Salt
Black PN
Brilliant Black PN
CI 28440
Food Black 1
1,7-Naphthalenedisulfonic Acid, 4-(Acetylamino)-5-Hydroxy-6-[[7-Sulfo-4-[(4-Sulfophenyl)Azo]-1-Naphthalenyl]Azo]-, Tetrasodium Salt

Trade Name:
Sicovit Brilliant Black E 151 (BASF)

BRINE SHRIMP EXTRACT

Definition: Brine Shrimp Extract is an extract of the shrimp, *Artemia salina.*

Chemical Class: Biological Products

Function: Not Reported

Technical/Other Name:
Extract of Brine Shrimp

Trade Name Mixture:
Extrait d'Artemia MPE PG5 (Yves Rocher)

BROMELAIN

CAS Nos.	EINECS Nos.
9001-00-7	232-572-4
37189-34-7	253-384-9

Definition: Bromelain is a mixture of enzymes found in pineapple juice.

Information Sources: BAN, 21CFR184.1024, INN, JAN, MI-12(1409), TSCA, USAN

Chemical Class: Proteins

Functions: Lytic Agent; Skin-Conditioning Agent - Miscellaneous

Technical/Other Names:
Bromelain, Juice
Bromelin Ananase
Fruit Bromelain

Trade Name:
Rona/Merck KGaA - Bromelain (Rona/EM Industries)

Trade Name Mixture:
Fructinase (Serobiologiques)

BROMELIA BALANSEA

Definition: *See 'Regulatory and Ingredient Use Information,' regarding EU labeling names for botanical derived ingredients in Volume 1, Introduction, Part A.*

Chemical Class: Biological Products

Technical/Other Name:
Bromelia Balansea Extract (U.S.)

BROMELIA BALANSEA EXTRACT

Definition: Bromelia Balansea Extract is an extract of the bromelia, *Bromelia balansea. See 'Regulatory and Ingredient Use Information,' regarding the labeling names for botanical derived ingredients in Volume 1, Introduction, Part A.*

Chemical Class: Biological Products

Function: Not Reported

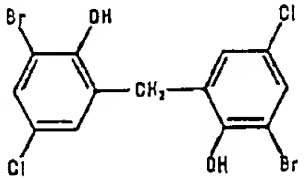
Technical/Other Names:
Bromelia Balansea (EU)
Extract of Bromelia Balansea

Trade Name Mixture:
VT-229 Extract of Bromelia (Vege-Tech)

BROMOCHLOROPHENE

CAS No.	EINECS No.
15435-29-7	239-446-8

Definition: Bromochlorophene is the halogenated aromatic compound that conforms to the formula:



Information Sources: EEC(VI/1-37)

Chemical Classes: Halogen Compounds; Phenols

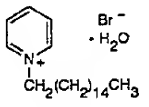
Functions: Cosmetic Biocide; Deodorant Agent

Technical/Other Names:
Brophen
3,3'-Dibromo-5,5'Dichloro-2,2'-Dihydroxydiphenylmethane
3,3'-Dibromo-5,5'-Dichloro-2,2'-Dihydroxydiphenylmethane
6,6-Dibromo-4,4-Dichloro-2,2'Methylene-Diphenol
2,2'-Methylenebis[6-Bromo-4-Chlorophenol]
2,2'Methylenebis[6-Bromo-4-Chlorophenol]
Phenol, 2,2'-Methylenebis[6-Bromo-4-Chloro-

BROMOCINNAMAL

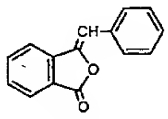
CAS No.	EINECS No.
5443-49-2	226-837-8

				$
45,174-6	**Cesium tetrachloroaluminate,** 99.99% [*17992-03-9*] $CsAlCl_4$ FW 301.70 *CORROSIVE* (*Packaged under argon in ampules*)		5g	51.70
			25g	197.70
46,665-4	**Cesium tetraphenylborate,** 98% [*3087-82-9*] $(C_6H_5)_4BCs$ FW 452.14 mp >400° *IRRITANT LIGHT-SENSITIVE*		1g	12.00
			10g	66.60
49,463-1 NEW	**Cesium titanate,** 99.9+% [*98084-25-4*] (cesium hexatitanate) $Cs_2Ti_6O_{13}$ FW 761.20 mp >300° *IRRITANT*		100g	77.20
36,776-1	**Cesium trifluoroacetate,** 99.99+% [*21907-50-6*] (trifluoroacetic acid, cesium salt) CF_3CO_2Cs FW 245.92 mp 114-116° *Fieser* **11**,557 **14**,322 *FT-NMR* **1**(1),853C *R&S* **1**(1),623E *IRRITANT HYGROSCOPIC*		10g	21.80
			50g	49.70
48,333-8	**Cesium triiodide,** 99.9+% [*762-62-9*] CsI_3 FW 513.62 mp 207.5° d 4.510 *TERATOGEN IRRITANT*		5g	32.90
			25g	91.30
49,550-6 NEW ★	**Cesium tungstate,** 99.95% [*13587-19-4*] Cs_2WO_4 FW 513.66 mp >350°		25g	45.70
38,895-5	**Cetrimide** [*8044-71-1*] (alkyltrimethylammonium bromide, predominantly C_{14}). mp 239°(dec.) *R&S* **1**(1),419H *CORROSIVE HYGROSCOPIC* Predominantly $C_{14}H_{29}N(CH_3)_3Br$ but also contains C_{12} and C_{16} homologs		100g	29.00
			500g	85.10
	Cetrimonium bromide, see 85,582-0, Cetyltrimethylammonium bromide page 357			
	Cetyl alcohol, see 1-Hexadecanol			
	Cetyl bromide, see 23,445-1, 1-Bromohexadecane page 256			
22,899-0 ★	**Cetyldimethylethylammonium bromide,** 85% [*124-03-8*] $CH_3(CH_2)_{15}N(CH_3)_2(C_2H_5)Br$ FW 378.49 mp 190°(dec.) *Beil.* **4**(3),425 *Merck Index* **12**,2071 *FT-IR* **1**(1),395A *Safety* **2**,717D *R&S* **1**(1),419M *RTECS#* BQ5425000 *TOXIC IRRITANT* Remainder stearyl compound		5g	9.60
			100g	33.00
			500g	106.90
	Cetyl palmitate, see 38,833-5, Hexadecyl hexadecanoate page 884			
28,531-5 ★	**Cetylpyridinium bromide monohydrate,** 98% (1-hexadecylpyridinium bromide) FW 402.47 mp 67-71° *Beil.* **20**(4),2317 *Safety* **2**,718A *R&S* **1**(2),2491A *RTECS#* UU4848000 *IRRITANT HYGROSCOPIC*		25g	14.20
			100g	27.60
85,556-1 ★	**Cetylpyridinium chloride monohydrate,** 98% [*6004-24-6*] FW 358.01 mp 83-86°. *Beil.* **20**(4),2316 *Merck Index* **12**,2074 *FT-NMR* **1**(3),235C *FT-IR* **1**(2),730C *Safety* **2**,718B *R&S* **1**(2),2489L *RTECS#* UU5075000 *IRRITANT*		5g	7.80
			100g	19.80
			500g	77.60
85,582-0 ★	**Cetyltrimethylammonium bromide** [*57-09-0*] (cetrimonium bromide) $CH_3(CH_2)_{15}N(CH_3)_3Br$ FW 364.46 mp >230°(dec.) *Beil.* **4**(3),424 *Fieser* **15**,77 *Merck Index* **12**,2068 *FT-IR* **1**(1),394D *Safety* **2**,718C *R&S* **1**(1),419J *RTECS#* BQ7875000 *CORROSIVE TOXIC* Phase-transfer catalyst for polyamide,[1] polycarbonate,[2] and polythiocarbonate[2] formation. (1) *Macromolecules* **1994**, *27*, 1087. (2) *J. Macromol. Sci., Pure Appl. Chem.* **1994**, *A31*, 283.		5g	19.50
			100g	28.50
			500g	83.10
29,273-7 ★	**Cetyltrimethylammonium chloride,** 25 wt. % solution in water [*112-02-7*] (hexadecyltrimethylammonium chloride) $CH_3(CH_2)_{15}N(CH_3)_3Cl$ FW 320.01 n^{25} 1.3778 d 0.968 Fp none *Beil.* **4**(1),388 *Safety* **2**,718D *R&S* **1**(1),419I *IRRITANT*		25mL	22.00
			500mL	35.50
37,459-8 ★	**Cetyltrimethylammonium hydrogensulfate,** 99% [*68214-07-3*] $CH_3(CH_2)_{15}N(CH_3)_3(HSO_4)$ FW 381.62 mp 250-260°(dec.) *Beil.* **4**(3),425 *FT-NMR* **1**(1),614C *R&S* **1**(1),419L *IRRITANT HYGROSCOPIC*		1g	13.90
			5g	45.70
	CFX™, see 26,066-5, Graphite, fluorinated, polymer page 867			
51,787-9 NEW	***trans*-Chalcone-d_{12},** 98 atom % D (benzylideneacetophenone-d_{12}) $C_6D_5CD{=}CDCOC_6D_5$ FW 220.36 mp 55-57° bp 208°/25mm *HYGROSCOPIC*		500mg	71.10
13,612-3	***trans*-Chalcone,** 97% [*614-47-1*] (benzylideneacetophenone) $C_6H_5CH{=}CHCOC_6H_5$ FW 208.26 mp 55-57° bp 208°/25mm Fp >230°F(110°C) *Beil.* **7**,478 *FT-NMR* **1**(2),875C *FT-IR* 1(2),51D *R&S* **1**(2),1661A *RTECS#* FL6900000		5g	14.60
			100g	21.10
	CHAPS, see 22,694-7, 3-[(3-Cholamidopropyl)dimethylammonio]-1-propanesulfonate page 423			
	CHAPSO, see 37,423-7, 3-[(3-Cholamidopropyl)dimethylammonio]-2-hydroxy-1-propanesulfonate page 423			
	Charcoal, see Activated carbon			



28,531-5

			$
41,809-9 ★	**Benzaldehyde,** redistilled, 99.5+% [*100-52-7*] C_6H_5CHO FW 106.12 mp -26° ..... bp 178-179° n^{20}_D 1.5450 d 1.044 Fp 145°F(62°C) *Beil.* 7,174 *Merck Index* 12,1085 *RTECS#* CU4375000 *CANCER SUSPECT AGENT MUTAGEN* (*Packaged under nitrogen in Sure/Seal™ bottles*)	100mL 500mL	21.50 40.40
B133-4 ★	**Benzaldehyde,** 99+% [*100-52-7*] C_6H_5CHO ..... Chlorine-free	2g 5g 100g 1kg 3kg 18kg	6.30 12.30 17.60 23.40 39.90 158.80
27,298-1	*trans,trans*-**Benzaldehyde azine,** 99% [*28867-76-7*] (benzalazine) ..... $C_6H_5CH{=}NN{=}CHC_6H_5$ FW 208.26 mp 92-93° *Beil.* 7,225 *FT-NMR* 1(3),546A *R&S* 1(2),2727L *IRRITANT*	25g	33.50
22,607-6 ★	**Benzaldehyde dimethyl acetal,** 99% [*1125-88-8*] (α,α-dimethoxytoluene) ..... $C_6H_5CH(OCH_3)_2$ FW 152.20 bp 87-89°/18mm n^{20}_D 1.4930 d 1.014 Fp 157°F(69°C) *Beil.* 7,209 *FT-NMR* 1(2),238A *FT-IR* 1(1),1066D *Safety* 2,345D *R&S* 1(1),1261A *RTECS#* CU5774000 *MOISTURE-SENSITIVE IRRITANT* An effective reagent used for construction of selenocarbonyl compounds. *Tetrahedron Lett.* **1992,** *33,* 7865.	5g 100g 500g	13.00 23.30 84.80
38,143-8 ★	**Benzaldehyde dimethyl acetal,** 95% [*1125-88-8*] $C_6H_5CH(OCH_3)_2$	100mL 500mL	22.70 89.30
42,960-0	**Benzaldehyde 2,4-dinitrophenylhydrazone,** environmental standard, 99% ..... [*1157-84-2*] $C_6H_5CH{=}NNHC_6H_3(NO_2)_2$ FW 286.25 mp 239-241° *Beil.* 15(2),217 *IRRITANT*	20mg	69.30
24,567-4	*syn*-**Benzaldehyde oxime,** 98% [*622-32-2*] $C_6H_5CH{=}NOH$ FW 121.14 mp 34-36° .... bp 104°/6mm n^{20}_D 1.5910 Fp 228°F(108°C) *Beil.* 7,218 *FT-NMR* 1(3),492A *Safety* 2,346B *IRRITANT*	10g 50g	14.60 48.60
	Benzaldehyde-2-sulfonic acid, sodium salt, see 23,938-0, 2-Formylbenzene-sulfonic acid, sodium salt page 838		
24,170-9	**Benzaldehyde tosylhydrazone,** 98% [*1666-17-7*] $C_6H_5CH{=}NNHSO_2C_6H_4CH_3$ ..... FW 274.34 mp 130-131° *Beil.* 11(3),317 *FT-NMR* 1(3),545B *FT-IR* 1(2),983C *Safety* 2,346D *R&S* 1(2),2727G *IRRITANT*	5g 25g	42.10 137.50
23,442-7	**Benzalkonium chloride** [*8001-54-5*] (alkylbenzyldimethylammonium chloride) ... $C_6H_5CH_2N(CH_3)_2RCl$ (R=C_8H_{17} to $C_{18}H_{37}$) *FT-IR* 1(1),1322A *Safety* 2,347A *R&S* 1(1),1539B *RTECS#* BO3150000 *TOXIC IRRITANT*	5g 100g 1kg	5.90 15.20 78.20
B180-6	**Benzalphthalide** [*575-61-1*] (3-benzylidenephthalide) FW 222.24 mp 99-102° ..... *Beil.* 17,376 *FT-NMR* 1(2),1309A *FT-IR* 1(2),321C *R&S* 1(2),1939M *RTECS#* TI3686000	100g 500g	21.80 62.90
49,183-7	**Benzamide-*carbonyl*-^{13}C,** 99 atom % ^{13}C [*88058-12-2*] $C_6H_5{}^{13}CONH_2$ FW 122.13 mp 128-129° Manufactured by *ISOTEC INC.*	500mg	220.70
42,544-3	**Benzamide-^{15}N,** 99 atom % ^{15}N [*31656-62-9*] $C_6H_5CO^{15}NH_2$ FW 122.13 ..... mp 127-130° (*Packaged in screw-cap vials*)	250mg 1g	40.20 109.90
15,076-2 ★	**Benzamide,** sublimed, zone refined, 99.9% [*55-21-0*] $C_6H_5CONH_2$ FW 121.14 ..... mp 128-130° *Beil.* 9,195 *Merck Index* 12,1087 *FT-NMR* 1(2),1383C *R&S* 1(2),2015A *RTECS#* CU8700000	250mg 1g	17.50 48.80
39,933-7 ★	**Benzamide,** sublimed, 99.5+% [*55-21-0*] $C_6H_5CONH_2$	5g 25g	18.60 62.00
13,582-8 ★	**Benzamide,** 99% [*55-21-0*] $C_6H_5CONH_2$	5g 100g 500g 2kg	15.40 21.90 44.50 162.10
43,476-0 ★	**Benzamidine hydrochloride,** 99% [*1670-14-0*] $C_6H_5C(=NH)NH_2 \cdot HCl$ FW 156.61 ... mp 169-173° *Beil.* 9,280 *RTECS#* CV6260000 *IRRITANT HYGROSCOPIC*	5g 25g	24.10 77.60
B200-4	**Benzamidine hydrochloride hydrate,** 97% $C_6H_5C(=NH)NH_2 \cdot HCl \cdot xH_2O$ FW 156.61 mp 86-88° *Beil.* 9,280 *Fieser* 6,27 *FT-NMR* 1(2),1467A *FT-IR* 1(2),412A *R&S* 1(2),2087A *RTECS#* CV6260000 *IRRITANT* Used in a "one-pot" preparation of imidazolines from cyclic sulfates of vicinal diols. *Tetrahedron Lett.* **1991,** *32,* 999.	5g 25g 100g	15.20 42.30 120.60



B180-6

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17,262-6	**Dodecyltriphenylphosphonium bromide,** 98% [*15510-55-1*] $CH_3(CH_2)_{11}P(C_6H_5)_3Br$ FW 511.53 mp 85-88° *Beil.* **16**(4),983 *IRRITANT HYGROSCOPIC*	1g 10g	7.70 42.20
41,349-6 ★	**Dodecyl vinyl ether,** 98% [*765-14-0*] $CH_3(CH_2)_{11}OCH{=}CH_2$ FW 212.38 bp 117-120° n^{25} 1.4382 d 0.817 Fp >230°F(110°C) *IRRITANT*	250mL 1L	18.70 48.60
24,440-6 ★	**1-Dodecyne,** 98% [*765-03-7*] $CH_3(CH_2)_9C{\equiv}CH$ FW 166.31 mp -19° bp 215° n^{25} 1.4340 d 0.778 Fp 175°F(79°C) *Beil.* 1,261 *FT-NMR* 1(3),504B *FT-IR* 1(2),933A *Safety* **2**,1496C *R&S* 1(2),2697M *IRRITANT*	5g 25g	22.80 80.40
	Dolcymene, see C12,145-2, *p*-Cymene page 484		
24,748-0 ★	**Domiphen bromide,** 97% [*538-71-6*] [(dodecyldimethyl-2-phenoxyethyl)-ammonium bromide] $CH_3(CH_2)_{11}N(CH_3)_2(CH_2CH_2OC_6H_5)Br$ FW 414.48 mp 117-119° *Merck Index* **12**,3474 *Safety* **2**,1496D *R&S* 1(1),1539D *RTECS#* BQ2030000	25g 100g	20.60 55.70
	DOP, see D20,115-4, Dioctyl phthalate page 690		
10,216-4	**DL-DOPA,** 97% [*63-84-3*] [3-(3,4-dihydroxyphenyl)-DL-alanine] $(HO)_2C_6H_3CH_2CH(NH_2)CO_2H$ FW 197.19 mp 290°(dec.) *Beil.* **14**(1),681 *Merck Index* **12**,3478 *FT-NMR* 1(2),1190A *FT-IR* 1(2),257A *R&S* 1(2),1847H *RTECS#* AY5250000 *IRRITANT LIGHT-SENSITIVE*	2.5g	11.90
33,378-6	**L-DOPA-*ring*-d_3,** 98+ atom % D [*53587-29-4*] [3-(3,4-dihydroxyphenyl-*2,5,6*-d_3)-L-alanine] $(HO)_2C_6D_3CH_2CH(NH_2)CO_2H$ FW 200.22 mp 292°(dec.) $[\alpha]^{27}$ -11.5° (c=5, 1*N* HCl) *R&S* 1(2),2939A *IRRITANT HYGROSCOPIC* (*Packaged in screw-cap bottles*)	250mg 1g	33.10 92.20
15,431-8 ★	**L-DOPA,** 99% [*59-92-7*] [3-(3,4-dihydroxyphenyl)-L-alanine] $(HO)_2C_6H_3CH_2CH(NH_2)CO_2H$ FW 197.19 mp 295°(dec.) $[\alpha]^{25}$ -11° (c=1, 1*N* HCl) *Beil.* **14**(1),681 *Merck Index* **12**,5490 *FT-NMR* 1(2),1190B *FT-IR* 1(2),257B *R&S* 1(2),1847I *RTECS#* AY5600000 *IRRITANT LIGHT-SENSITIVE* 99% ee/GLC	1g 5g 25g	10.80 20.10 75.70
	Dopamine, see 3-Hydroxytyramine		
	Dotriacontafluoropentadecane, see 44,680-7, Perfluoropentadecane page 1286		
D22,310-7 ★	**Dotriacontane,** 97% [*544-85-4*] $CH_3(CH_2)_{30}CH_3$ FW 450.88 mp 68-70° bp 467° *FT-NMR* 1(1),8B *FT-IR* 1(1),6D *Safety* **2**,1497B *R&S* 1(1),7E *RTECS#* JT2360000	5g 25g	19.80 78.30
	Dowanol™ DB, see 48,429-6, Di(ethylene glycol) butyl ether page 578		
	Dowanol™ DM, see 48,426-1, Di(ethylene glycol) methyl ether page 579		
	Dowanol™ DPM, see 48,425-3, Di(propylene glycol) methyl ether, mixture of isomers page 706		
	Dowanol™ DPMA, see 48,420-2, Di(propylene glycol) methyl ether acetate, mixture of isomers page 706		
	Dowanol™ DPnB, see 48,423-7, Di(propylene glycol) butyl ether, mixture of isomers page 706		
	Dowanol™ DPnP, see 48,421-0, Di(propylene glycol) propyl ether, mixture of isomers page 706		
	Dowanol™ EB, see 48,428-8, Ethylene glycol butyl ether page 773		
	Dowanol™ EPh, see 48,431-8, Ethylene glycol phenyl ether page 775		
	Dowanol™ PM, see 48,440-7, 1-Methoxy-2-propanol page 1077		
	Dowanol™ PMA, see 48,443-1, 1-Methoxy-2-propanol acetate page 1077		
	Dowanol™ PnB, see 48,441-5, Propylene glycol butyl ether, mixture of isomers page 1436		
	Dowanol™ PnP, see 48,432-6, Propylene glycol propyl ether, mixture of isomers page 1436		
	Dowanol™ PPh, see 48,442-3, 1-Phenoxy-2-propanol page 1294		
	Dowanol™ TPM, see 48,424-5, Tri(propylene glycol) methyl ether, mixture of isomers page 1697		
	Dowanol™ TPnB, see 48,422-9, Tri(propylene glycol) butyl ether, mixture of isomers page 1697		
44,654-8 ★	**DOW CORNING® 702 silicone diffusion pump fluid** [*68037-71-8*] bp 180°/0.5mm n^{25} 1.5200 d 1.070 Fp >230°F(110°C) *IRRITANT*	500mL 5x500mL	101.50 482.20
44,597-5 ★	**DOW CORNING® 704 silicone diffusion pump fluid** [*3982-82-9*] (1,3,3,5-tetramethyl-1,1,5,5-tetraphenyltrisiloxane) $[CH_3Si(C_6H_5)_2O]_2Si(CH_3)_2$ FW 484.82 bp 215°/0.5mm n^{25} 1.5590 d 1.070 Fp 214°F(101°C) *IRRITANT*	500mL 5x500mL	136.50 648.00
44,598-3 ★	**DOW CORNING® 705 silicone diffusion pump fluid** [*3390-61-2*] (1,3,5-trimethyl-1,1,3,5,5-pentaphenyltrisiloxane) $[CH_3Si(C_6H_5)_2O]_2Si(C_6H_5)CH_3$ FW 546.90 bp 245°/0.5mm n^{25} 1.5800 d 1.090 Fp 214°F(101°C) *IRRITANT*	500mL 5x500mL	232.50 1,104.10

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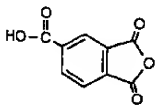
12.50	T3,280-8 ★	**Benzenethiol,** 97% [*108-98-5*] (thiophenol) C_6H_5SH	5g†	9.70
18.90			100g†	16.20
46.80			500g†	40.40
21.70			1kg†	72.80
71.60	41,829-3 ★	**Benzenethiol, sodium salt,** tech., 90% [*930-69-8*] (sodium thiophenoxide, thiophenol, sodium salt) C_6H_5SNa FW 132.16 mp >300° *Beil.* 6,296 *MOISTURE-SENSITIVE TOXIC*	10g	22.10
8.60			50g	73.20
9.00	38,589-1	**Benzenethionosulfonic acid, sodium salt,** tech., 85% $C_6H_5S(=S)(=O)ONa$ FW 196.22 mp 275°(dec.) *Beil.* 11,87 *R&S* 1(2),2205H *HYGROSCOPIC*	25g	19.70
12.40	11,931-8	**(Benzene)tricarbonylchromium,** 98% [*12082-08-5*] $(C_6H_6)Cr(CO)_3$ FW 214.14 mp 163-166° *Beil.* 5(4),625 *Fieser* 6,27 **13**,19 *FT-IR* 1(2),1297D *R&S* 1(2),3135L *RTECS#* GB4700000	1g	62.50
49.30			5g	249.70
20.40	14,753-2 ★	**1,3,5-Benzenetricarbonyl trichloride,** 98% [*4422-95-1*] $C_6H_3(COCl)_3$ FW 265.48 mp 34.5-36° bp 180°/16mm Fp >230°F(110°C) *FT-IR* 1(2),352C *Safety* 2,354B *R&S* 1(2),1981J *CORROSIVE LACHRYMATOR*	10g	18.00
216.80			25g	27.60
			100g	84.50
15.10	B420-1	**1,2,3-Benzenetricarboxylic acid hydrate,** 98% [*36362-97-7*] (hemimellitic acid) $C_6H_3(CO_2H)_3 \cdot xH_2O$ FW 210.14 mp 190-192°(dec.) *Beil.* 9,976 *FT-NMR* 1(2),1088C *FT-IR* 1(2),201B *Safety* 2,354C *R&S* 1(2),1793O *IRRITANT*	1g	11.40
18.30			10g	62.70
33.50	B458-9 ★	**1,2,4-Benzenetricarboxylic acid,** 99+% [*528-44-9*] (trimellitic acid) $C_6H_3(CO_2H)_3$ FW 210.14 mp 231°(dec.) *Beil.* 9,977 *Merck Index* 12,9832 *FT-NMR* 1(2),1089B *FT-IR* 1(2),201D *Safety* 2,354D *R&S* 1(2),1795B *RTECS#* DC1980000 *IRRITANT*	5g	10.60
60.30			100g	37.50
14.50	48,274-9 ★	**1,3,5-Benzenetricarboxylic acid,** 95% [*554-95-0*] (trimesic acid) $C_6H_3(CO_2H)_3$ FW 210.14 mp >300° *Beil.* 9,978 *FT-NMR* 1(2),1089C *IRRITANT* May contain up to 5% acetic acid	100g	32.60
40.90			500g	108.70
95.90	B460-0 ★	**1,2,4-Benzenetricarboxylic anhydride,** 97% [*552-30-7*] (trimellitic anhydride) FW 192.13 mp 165-169° *Beil.* 18,468 *Merck Index* 12,9833 *FT-NMR* 1(2),1329C *FT-IR* 1(2),334A *Safety* 2,355A *R&S* 1(2),1959G *RTECS#* DC2050000 *HIGHLY TOXIC MOISTURE-SENSITIVE*	25g	13.30
25.60			500g	16.90
71.10			1kg	17.50
8.80	17,340-1 ★	**1,2,4-Benzenetriol,** 99% [*533-73-3*] (hydroxyhydroquinone) $C_6H_3(OH)_3$ FW 126.11 mp 140°(subl.) *Beil.* 6,1087 *Merck Index* 12,1101 *FT-NMR* 1(2),299B *FT-IR* 1(1),1104A *Safety* 2,355B *R&S* 1(1),1297B *RTECS#* DC4200000	1g	22.80
29.10			5g	80.80
			25g	320.00
26.70		**9,10-*o*-Benzeno-9,10-dihydroanthracene,** see 11,761-7, Triptycene page 1698		
74.70	B470-8 ★	**Benzethonium chloride,** 97% [*121-54-0*] (phemerol chloride) FW 448.10 mp 162-164° *Fieser* 1,433 *Merck Index* 12,1103 *FT-NMR* 1(2),674C *FT-IR* 1(1),1322C *Safety* 2,355C *R&S* 1(1),1539E *RTECS#* BO7175000 *TOXIC IRRITANT*	5g	14.40
			100g	20.70
			500g	80.30
		Benzhydrazide, see B1,307-1, Benzoic hydrazide page 154		
12.90	B485-6 ★	**Benzhydrol,** 99% [*91-01-0*] $(C_6H_5)_2CHOH$ FW 184.24 mp 65-67° bp 297-298° *Beil.* 6,678 *Merck Index* 12,1121 *FT-NMR* 1(2),336A *FT-IR* 1(1),1125B *Safety* 2,355D *R&S* 1(1),1319C *RTECS#* DC7452000 *IRRITANT*	5g	7.00
82.10			100g	18.60
			500g	58.90
		Benzhydrylamine, see Aminodiphenylmethane		
		Benzhydryl bromide, see B6,540-3, Bromodiphenylmethane page 251		
23.90		**Benzhydryl chloride,** see 12,503-2, Chlorodiphenylmethane page 379		
79.10	B515-1 ★	**Benzil,** 98% [*134-81-6*] $C_6H_5COCOC_6H_5$ FW 210.23 mp 94-95° *Merck Index* 12,1107 *FT-NMR* 1(2),876C *FT-IR* 1(2),58B *Safety* 2,356D *R&S* 1(2),1663B *RTECS#* DD1925000 *IRRITANT*	5g	11.60
25.80			100g	12.30
85.90			500g	32.90
			1kg	59.30
		Benzil dioxime, see 28,997-3, Diphenylglyoxime page 698		
9.10	B519-4 ★	**Benzilic acid,** 99+% [*76-93-7*] (diphenylglycolic acid) $(C_6H_5)_2C(OH)CO_2H$ FW 228.25 mp 150-153° *Beil.* 10,342 *Merck Index* 12,1109 *FT-NMR* 1(2),995B *FT-IR* 1(2),146A *R&S* 1(2),1747C *RTECS#* DD2064000	5g	12.40
22.70			100g	13.40
79.50			500g	53.10
	B522-4	**Benzil monohydrazone,** 98% [*5344-88-7*] $C_6H_5C(=NNH_2)COC_6H_5$ FW 224.26 mp 150-152° *Beil.* 7(1),394 *FT-IR* 1(1),1265A *R&S* 1(1),1459M Precursor to diphenylketene by treatment with mercuric oxide.	25g	20.70
			100g	55.70
137.80	19,412-3 ★	**Benzimidazole,** 98% [*51-17-2*] FW 118.14 mp 172-174° *Beil.* 23,131 *Merck Index* 12,1111 *FT-NMR* 1(3),178B *FT-IR* 1(2),688A *Safety* 2,357B *R&S* 1(2),2439B *RTECS#* DD5425000	5g	11.60
457.70			100g	25.80
			500g	101.80
14.30	29,678-3	**5-Benzimidazolecarboxylic acid,** 96% [*15788-16-6*] FW 162.15 mp >300° *Beil.* 25(4),817 *Safety* 2,357C *R&S* 1(2),2443A *IRRITANT*	5g	25.20
22.10			25g	104.70
82.30				
31.80				
106.50				
† 14.40				
† 56.40				



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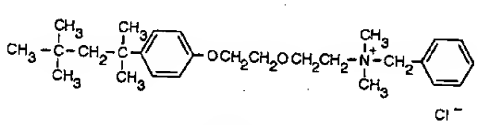

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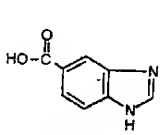

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